SAN FRANCISCO DISTRICT

US Army Corps
of Engineers

PUBLIC NOTICE

NUMBER: 22719S DATE: April 10, 1998
RESPONSE REQUIRED BY: May 10, 1998

Regulatory Branch
333 Market Street
San Francisco, CA 94105-2197 PERMIT MANAGER: Angie Wulfow PHONE: 415-977-8452 E-mail: awulfow@smtp.spd.usace.army.mil

1. INTRODUCTION: The Port of San Francisco, Ferry Building, Suite 3100, San Francisco, CA 94111, (Contact: Carol Bach, 415-274-0568) has submitted an application for a Department of the Army permit to excavate 200 cubic yards of material to create 550 lineal feet of channel, place approximately 3,300 cubic yards of rip rap, rip an unvegetated hard panne to a depth of 6 inches, and construct a fishing pier, in wetlands and waters subject to United States Army Corps of Engineers (USACE) jurisdiction. The proposed project is referred to as the Pier 98 Wetlands and Public Access Enhancement Project. It is located within the City of San Francisco, San Francisco Bay, India Basin, San Francisco County, California.

2. PROJECT DESCRIPTION: Pier 98 (the site) is a 25-acre, irregularly shaped peninsula that consists entirely of fill that the Port placed in San Francisco Bay between 1970 and 1977. The Port is obligated to design, and obtain permits for the proposed project in accordance with a 1993 agreement with San Francisco Bay Conservation and Development Commission. The Port expects to began construction in June 1998, and complete construction in October 1998.

The Port proposes to enhance existing wetlands, create new wetland areas, and improve public access to the site as follows:

Enhance 2.95 acres of existing jurisdictional wetlands. The Port proposes to remove debris from the existing tidal salt marsh, remove invasive plants, excavate within the marsh to create intertidal channels, and stabilize the shoreline at an existing intertidal pond. Debris such as large concrete blocks, creosote treated wood,asphalt, and protruding rebar will be removed from the existing wetlands.

To provide adequate tidal action for the created and enhanced tidal marsh approximately 550 linear feet of channel will be excavated to an elevation of four feet above mean lower low water (See Figure 2). The channel will be 10 feet wide for about 220 feet, where it will split into two channels. One channel will bend to the west to provide a source of tidal inflow to the created marsh area. This channel will narrow as it extends to the west, ultimately tapering to two feet wide with a base elevation of six feet-mean lower low water (mllw) at its headward end. The other channel will extend eastward toward the existing intertidal ponds. The approximate location and length of the channel is illustrated in Figure 2. The exact location and length will be determined during final design. The total volume of material to be excavated is approximately 200 cubic yards. The channel will be excavated using standard earth-moving equipment (e.g. backhoe, excavator). Excavated material will be reused on-site in upland areas for construction of trails, berms, or other appropriate uses.

Much of the project site is flooded at higher tides. A large intertidal pond located along the southern side of the project area receives water from an existing tidal inlet. This inlet is at elevation 4.5, approximately 2 feet above the bottom of the adjacent pond, and is approximately 2 feet wide. At higher tides water moves from the large pond overland into the intermittently ponded hard panne area. There is currently evidence of extensive erosion just bayside of the inlet and approximately

30 feet west of the inlet. It appears that over time this inlet will erode and the large pond will drain. To maintain the habitat values of the large pond the eroding areas will be stabilized. The current tidal inlet will be filled and a berm constructed that will match the existing berm height (See Figure 13). This berm will promote sheet flow into the large pond instead of concentrated flow through the channel, and should attenuate erosion in this area. The berm is designed to be stabilized with marsh vegetation.

To further protect the large pond from erosion, existing rock debris on site will be used to stabilize portions of the shoreline approximately 30 feet west of the inlet where large-scale erosion is also evident (See Figure 13).

Convert 1.34 acres of intermittently ponded hard panne (waters of U.S.) to tidal salt marsh.

Adjacent to the existing intertidal ponds is an unvegetated intermittently ponded hard panne. This area is the result of the fill material, asphalt rubble and debris, concreting together. To improve habitat values the hard panne will be ripped to a dept of about 6 inches using a backhoe equipped with a cutting tool to break up the surface and allow colonization by marsh vegetation and invertebrates.

Excavate upland fill from existing elevations up to 14 feet-mllw to between five and seven feet-mllw to create 3.95 acres of new tidal salt marsh (See Figure 3, project area to be excavated).

The created tidal marsh is designed to have four intertidal landscape elements determined largely by elevation. These consist of a marsh plain, areas of intertidal islands, intertidal channels, and a transition zone. Cross sections of the existing and created tidal marsh areas are shown in Figure 7.

The tidal marsh plain is designed to support pickleweed and associated holophytic plant species. Within the created marsh plain a number of existing "islands" of serpentine soils will be left in place to act as loafing habitat. The 550 linear feet of created tidal channel (see enhancement of existing jurisdictional wetlands) will provide tidal circulation.

The upland edge of the created marsh area will be graded gently (5 to 1) to provide increased transition zone habitat.

Construct public access amenities to enhance beneficial public uses of the site and attract activity away from the wetlands.

Public access amenities will include a service road and pedestrian path (Figures 4 and 5), benches, a wetland viewing area (Figure 11), and a picnic area in the upland portion of the site. A fence around the wetland (Figure 12), and a fishing pier (Figures 9 and 10) will be constructed within the Corps jurisdictional areas.

Cover 4.4 acres of upland area with a geosynthetic clay liner and cover soil.

The underlying fill in the area, illustrated as "APPROX. LIMIT OF LANDFILL CAP" in Figure 2, contains decomposable waste, referred to as non-inert fill. Waste Discharge Requirements issued by the Regional Water Quality Control Board required that the non-inert fill area, which is all above mean higher high water, be graded to promote runoff, and capped with a low-permeability material to prevent percolation of rain water through the non-inert fill. A section diagram of the cap is provided in Figure 6.

Shoreline Stabilization.

The northern shoreline of the existing project site around to the southern tip is covered with a band of riprap. A second area of existing riprap is located along the southern shoreline (See Figure 2). To further protect these areas from erosion, material that is recovered from the site cleanup will be reused as riprap to reinforce the existing shoreline riprap. The estimated volume of recovered material suitable for use as riprap is 3,300 cubic yards (See Figure 8).

This application is being processed pursuant to the provisions of Section 404 of the Clean Water Act

(33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

3. STATE APPROVALS: Under Section 401 of the Clean Water Act (33 U.S.C. Section 1341), an applicant for a Corps permit must obtain a State water quality certification or waiver before a Corps permit may be issued. The applicant has provided the Corps with evidence that he has submitted a valid request for State water quality certification to the San Francisco Regional Water Quality Control Board (RWQCB). No Corps permit will be granted until the applicant obtains the required certification or waiver. A waiver shall be explicit, or it will be deemed to have occurred if the State fails or refuses to act on a valid request for certification within 60 days after the receipt of a valid request, unless the District Engineer determines a shorter or longer period is reasonable for the State to act.

Those parties concerned with any water quality issues that may be associated with this project should write to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612, by the close of the comment period of this public notice.

4. PRELIMINARY ENVIRONMENTAL ASSESSMENT: The Corps of Engineers has assessed the environmental impacts of the action proposed in accordance with the requirements of the National Environmental Policy Act of 1969 (Public Law 91-190), and pursuant to Council on Environmental Quality's Regulations, 40 CFR 1500-1508, and Corps of Engineers' Regulations, 33 CFR 230 and 325, Appendix B. Unless otherwise stated, the Preliminary Environmental Assessment describes only the impacts (direct, indirect, and cumulative) resulting from activities within the jurisdiction of the Corps of Engineers. The Environmental Matrix used in the preparation of this Preliminary Environmental Assessment is on file in the Regulatory Branch, Corps of Engineers, 333 Market Street, San Francisco, California.

The Preliminary Environmental Assessment resulted in the following findings:

a. IMPACTS ON THE AQUATIC ECOSYSTEM

(1) PHYSICAL/CHEMICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Substrate - The existing substrate on the project sites consists of upland fill, tidal wetlands interspersed with fill, tidal mudflats, ponds, a small gravel beach, and unvegetated intermittently ponded hard panne. To create new wetlands, substrate elevations will be lowered by removing old fill. Within the existing tidal wetlands debris will be removed and impacts to wetlands minimized. The changes in substrate elevations are long term and beneficial.

Currents/Circulation - To improve tidal exchange in the existing wetlands and proposed new wetlands 550 linear feet of intertidal channel will be excavated. Improving the tidal circulation will have a long term beneficial impact.

Water Quality - The Port has worked with RWQCB staff to develop a landfill closure plan. The Board is requiring a cap for the "non-inert fill area", an approximately 4.4 acre area where decomposable material was placed during creation of the site (See Figure 2). The capped area will be graded to maintain a minimum of one-foot of cover over noninert fill. An impermeable geosynthetic clay liner will be placed above this compacted foundation layer and covered with a minimum two-foot layer of on-site soils. Finally, the capped area will be overlain by a vegetative cover (See Figure 6). This work should have long-term beneficial impacts on water quality by reducing the possibility of surface runnoff contacting the original fill.

2. BIOLOGICAL CHARACTERISTIC & ANTICIPATED CHANGES

Wetlands (Special Aquatic Site) - The project will have long-term beneficial impacts on wetlands by creating 5 acres of new tidal wetlands (See Figures 2 and 3). The created tidal marsh plain is expected to support a variety of marsh fauna, including a diverse invertebrate community, and foraging waterfowl and shorebirds.

Long-term beneficial impacts will also accrue from the enhancement of 2.95 acres of existing tidal marsh. The enhancement includes debris removal, eradication of exotic plants, ripping the hard panne, and stabilizing the existing intertidal ponds.

The 300 cubic yards of fill material to be placed across the eroding tidal inlet by the large pond (See Figure 13) has minimal adverse impacts as the new berm will be planted with pickleweed.

A minor loss of wetlands will occur from the excavation of 200 cubic yards of material during construction of the intertidal channel.

Mudflats (Special Aquatic Site) - A large area of the northern shoreline, extending around the point of the peninsula, has been previously riprapped. To provide additional erosion protection, pieces of concrete debris that meet BCDC specifications for shoreline riprap will be incorporated into the existing riprap areas (See Figures 2 and 8). Supplemental riprap would also be placed along the southern shoreline for erosion protection. Approximately 3,300 cubic yards of supplemental riprap will be incorporated into the existing riprap. This is a minor adverse impact due to the previously filled nature of the mudflat.

Approximately 18 cubic yards of new riprap will be placed along the shoreline just south of the existing intertidal pond (See Figure 13). This a minor long-term adverse impact.

A small area of mudflat, 0.01 acre, will be shaded by construction of the fishing pier. This is a long term minor adverse impact.

Endangered Species - An evaluation of potential special status species habitat on site was conducted in 1996. These results show that no special status species were present at the site and that it is highly unlikely that any special status species use the site.

Habitat for Fish, Other Aquatic Organisms, and Wildlife- The erosion stabilizing measures proposed to protect the large intertidal pond, and prevent possible future draining, will provide long-term beneficial impacts for that aquatic habitat.

b. IMPACTS ON RESOURCES OUTSIDE THE AQUATIC ECOSYSTEM

(1) SOCIOECONOMIC CHARACTERISTICS AND ANTICIPATED CHANGES

Aesthetic Quality - Removal of large portions of the fill material and construction debris, landscaping the uplands, and development of recreation facilities will provide long-term beneficial aesthetic impacts.

Recreational Opportunities - The construction of a fishing pier near the Pacific Gas & Electric Company warm-water outfall will provide improved fishing access. The pier will be handicapped accessible. A second handicapped accessible fishing area will be provided at the tip of the peninsula. A wetland viewing area, including a bird blind (See Figure 11), will be constructed with landscaping to screen the marsh from human disturbance. Other recreational improvements include a picnic area (See Figure 2) and restrooms. These improvements will have long-term beneficial impacts on recreational opportunities.

(2) HISTORIC - CULTURAL CHARACTERISTICS AND ANTICIPATED CHANGES

The proposed work will take place on a 25-acre peninsula created by the placement of fill in the 1970s. No historic or cultural resources exist on the project site.

c. SUMMARY OF INDIRECT IMPACTS

The project will provide improved access and recreational opportunities for the public.

d. SUMMARY OF CUMULATIVE IMPACTS

The project will have long-term beneficial impacts by restoring wetlands along the shoreline of San Francisco Bay.

e. NEPA SIGNIFICANCE AND PRELIMINARY

CONCLUSIONS

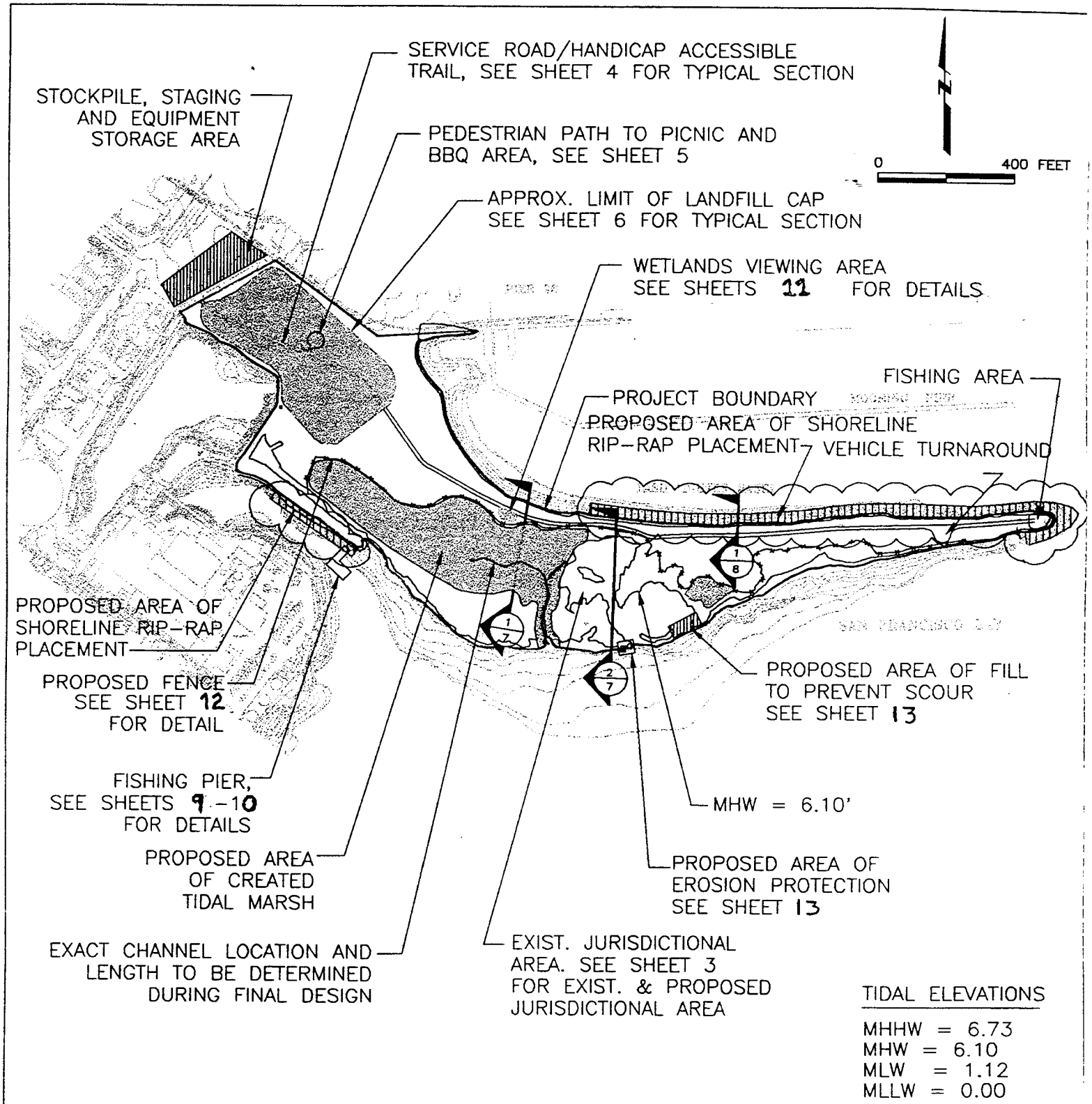
Based on an analysis of the above identified impacts, a preliminary determination has been made that it will not be necessary to prepare an Environmental Impact Statement (EIS) for the subject permit application, since the predicted impacts are not likely to reach the threshold of "significance" (40 C.F.R. 1508.27). The Environmental Assessment for the proposed action, however, has not yet been made final, and this preliminary determination may be reconsidered.

5. EVALUATION OF ALTERNATIVES: Evaluation of this activity's impacts includes application of the guidelines promulgated by the Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). An evaluation was made by this office under the 404(b)(1) guidelines and it was determined that the proposed project is water dependent.

6. PUBLIC INTEREST EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision will reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

7. CONSIDERATION OF COMMENTS: The Corps of Engineers is soliciting comments from the public, Federal, State and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

8. SUBMISSION OF COMMENTS: Interested parties may submit in writing any comments concerning this activity. Comments should include the applicant's name, the number, and the date of this notice and should be forwarded so as to reach this office within the comment period specified on page one of this notice. Comments should be sent to: Lieutenant Colonel Richard G. Thompson, District Engineer, Attention: Regulatory Branch. It is Corps policy to forward any such comments which include objections to the applicant for resolution or rebuttal. Any person may also request, in writing, within the comment period of this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Additional details may be obtained by contacting the applicant whose address is indicated in the first paragraph of this notice, or by contacting Angie Wulfow of our office at telephone 415-977-8452 or e-mail: awulfow@smtp.spd.usace.army.mil. Details on any changes of a minor nature which are made in the final permit action will be provided on request.



PURPOSE:
To create and enhance tidal wetlands and public access opportunities at the site.

DATUM: MLLW

PLAN VIEW

APPLICANT:
Port of San Francisco
Ferry Building, Suite 3100
San Francisco, California 94111

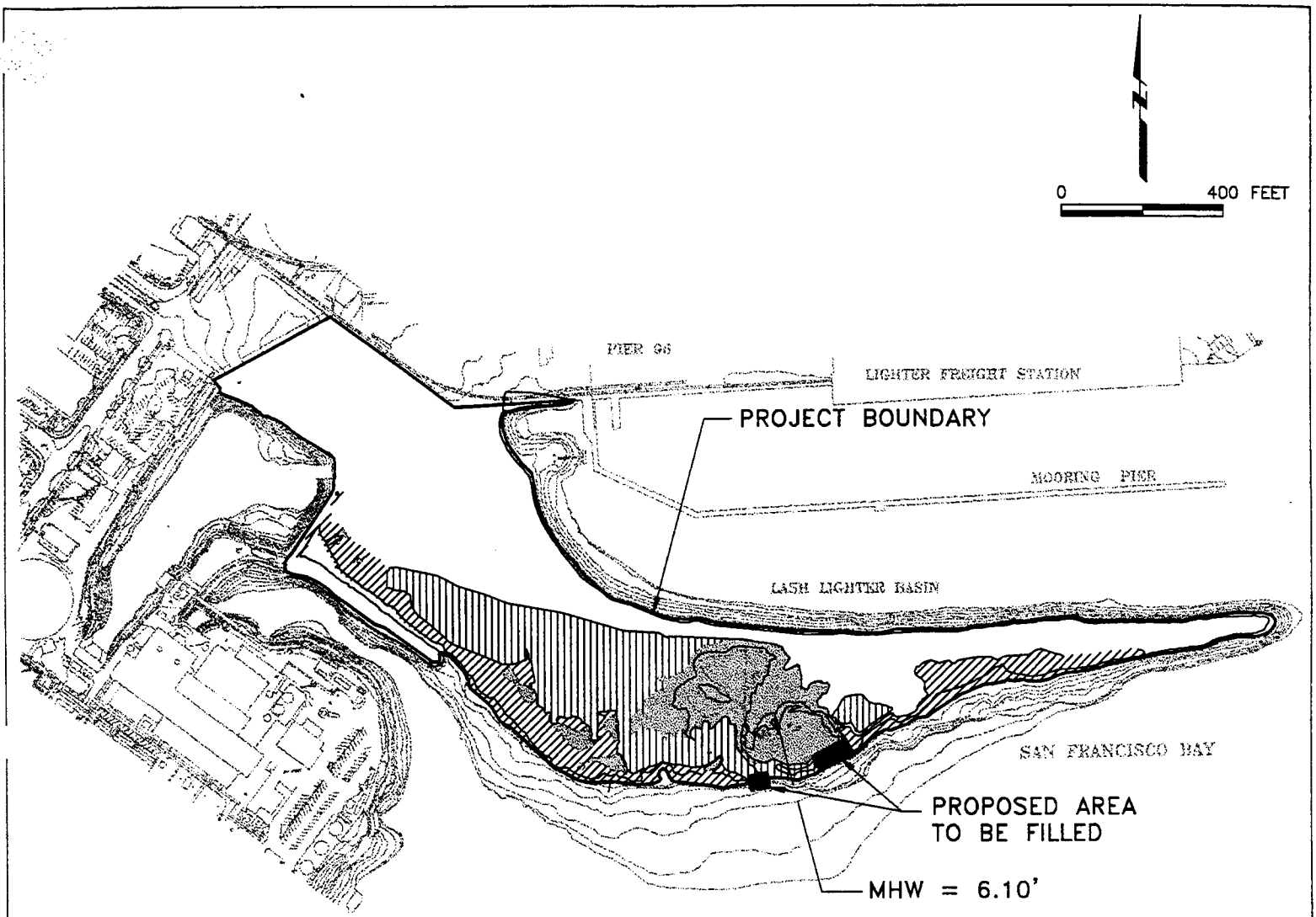
Date: 02-19-98 Project No. 3400

Figure 2 of 13

PIER 98
SITE PLAN AND INDEX

Project Location:
India Basin, San Francisco Bay
San Francisco County, California

Figures by: Levine-Fricke-Recon



EXPLANATION

NOTES: ALL ELEVATIONS RELATIVE TO MLLW (AT HUNTERS POINT)

SOURCE: AEROMETRIC SURVEYS SAN MATEO, CALIFORNIA

PREPARED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY 05-08-96

TIDAL DATUMS FROM NATIONAL OCEAN SERVICES (NOS) STATION # 941-4358 (HUNTERS POINT)	
HIGHEST OBSERVED WATER LEVEL (12/27/1974)	= 8.16 FEET
MEAN HIGHER HIGH WATER (MHHW)	= 6.73 FEET
MEAN HIGH WATER (MHW)	= 6.10 FEET
MEAN TIDE LEVEL (MTL)	= 3.61 FEET
* NATIONAL GEODETIC VERTICAL DATUM - 1929 (NGVD)	= 3.12 FEET
MEAN LOW WATER (MLW)	= 1.12 FEET
MEAN LOWER LOW WATER (MLLW)	= 0.00 FEET
LOWEST OBSERVED WATER LEVEL (12/01/1975)	= -1.86 FEET

* NGVD REFERENCE BASED ON ADJUSTMENT OF 1958 AND NOS LEVELS OF 1974-1976

JURISDICTIONAL AREAS

CORPS JURISDICTIONAL WETLANDS

CORPS JURISDICTIONAL WATERS

NEW WETLANDS

PROJECT AREA TO BE EXCAVATED

PROJECT AREA TO BE FILLED

PURPOSE:
show existing and
posed jurisdictional areas

DATUM: MLLW

PLAN VIEW

APPLICANT:
Port of San Francisco
Ferry Building, Suite 3100
San Francisco, California 94111

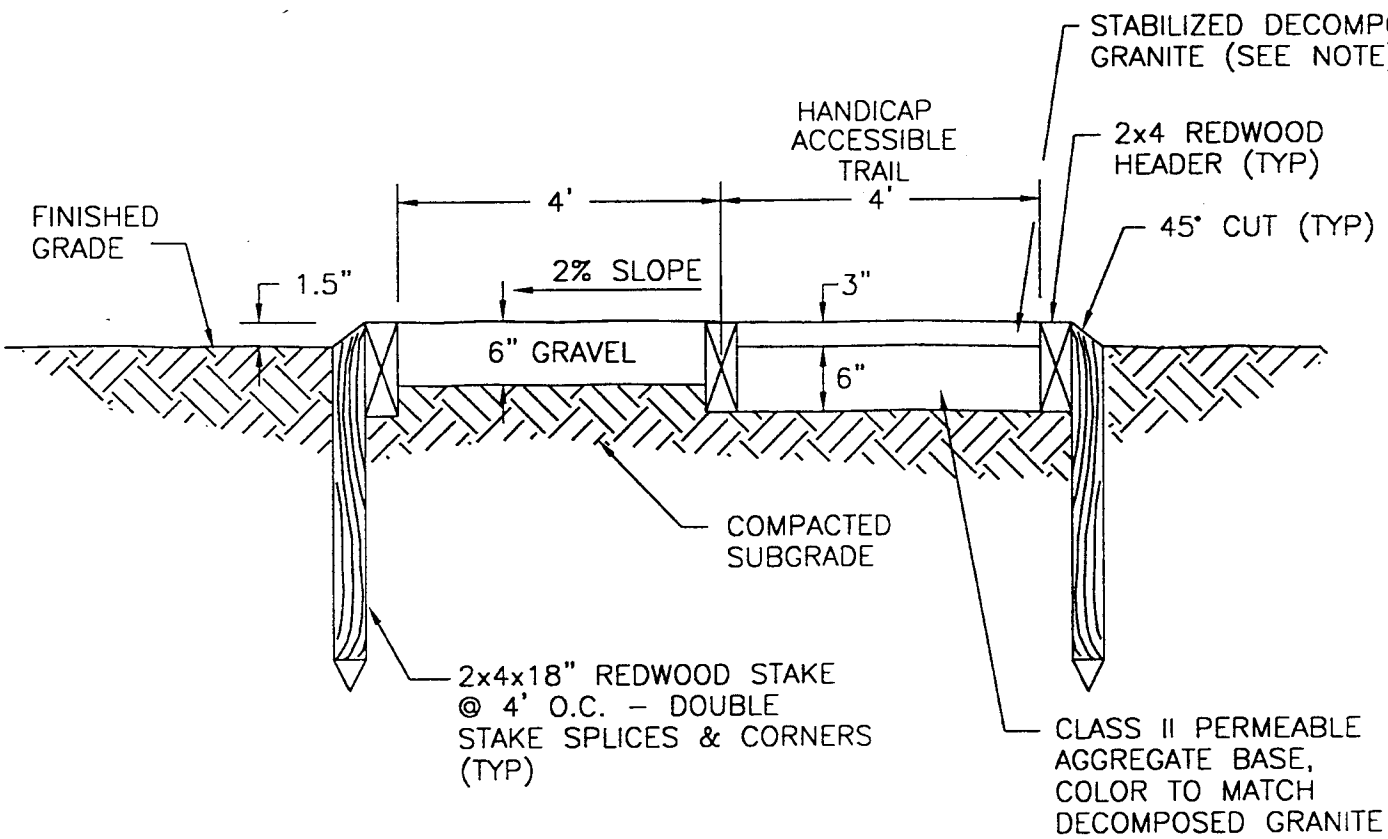
Date: 10-15-97 Project No. 3400

Figure 3 of 13

PIER 98
CORPS JURISDICTIONAL AREAS

Project Location:
India Basin, San Francisco Bay
San Francisco County, California

Figures by: Levine-Fricke-Recon



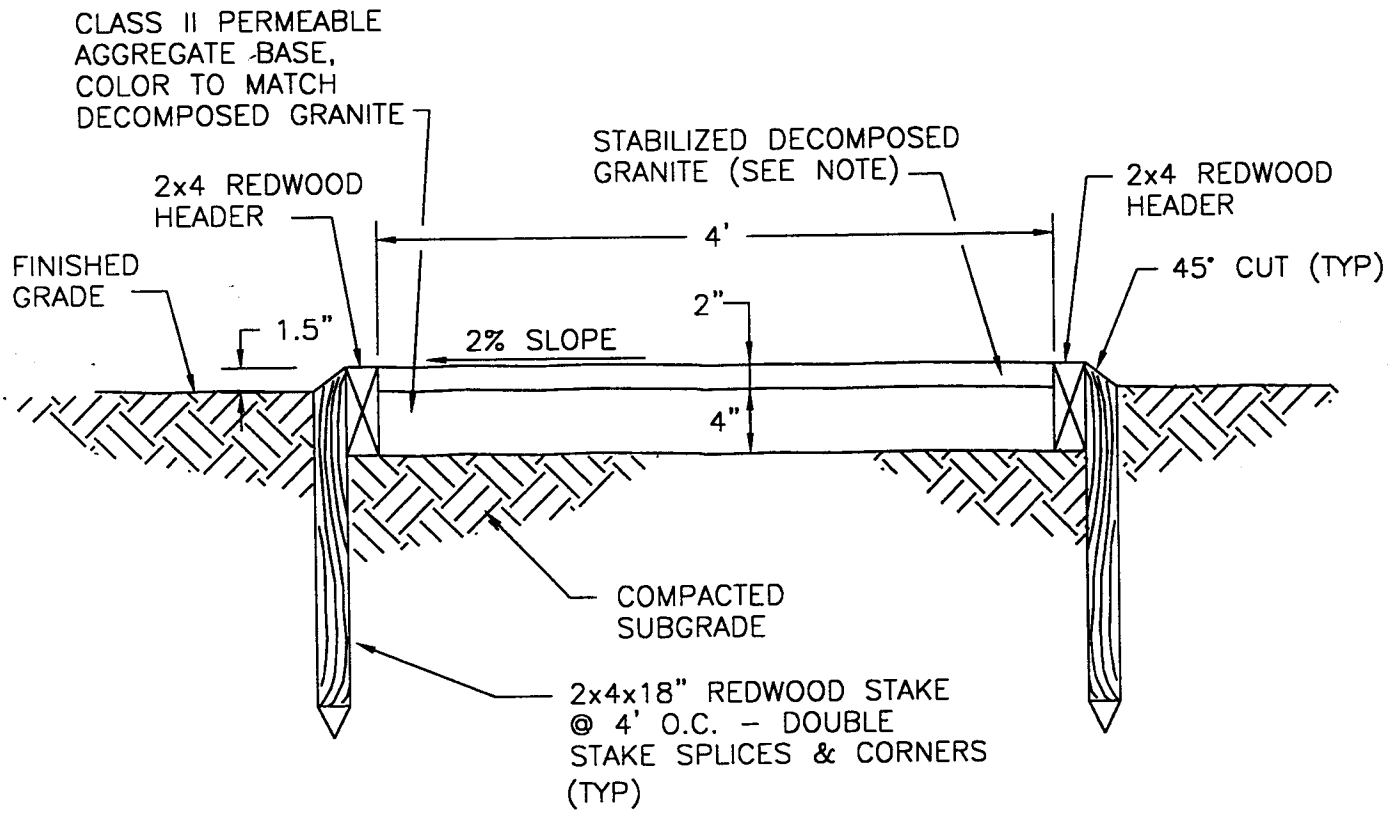
TYPICAL CROSS SECTION

N.T.S.

NOTES:

1. DECOMPOSED GRANITE SHALL BE STABILIZED WITH NON-TOXIC SOIL STABILIZER MANUFACTURED BY STABILIZER INC., PHOENIX, AZ. OR EQUAL.
2. APPROX. 2825 LF 8' ROADWAY/TRAIL

PURPOSE: provide service vehicle handicap access on site. DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 10-15-97 Project No. 3400	Figure 4 of 13 PIER 98 SERVICE ROAD/TRAIL Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



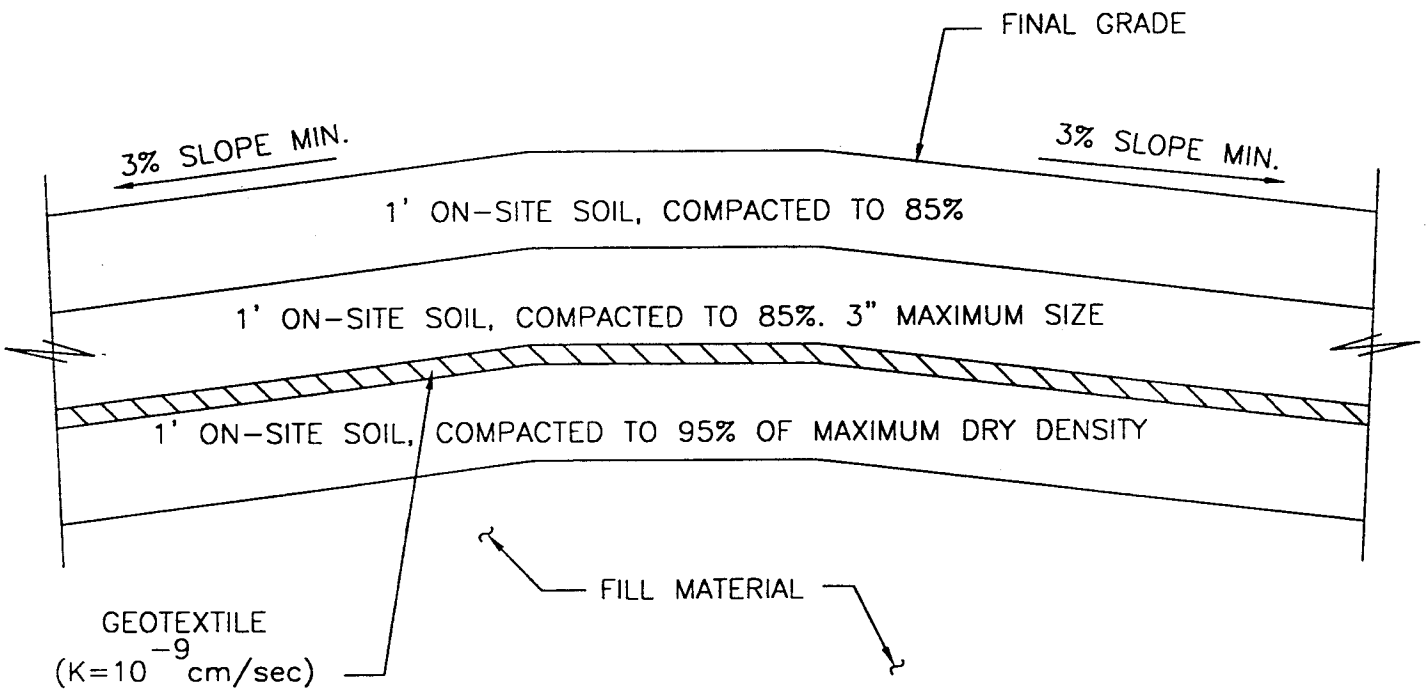
TYPICAL CROSS SECTION

N.T.S.

NOTES:

1. DECOMPOSED GRANITE SHALL BE STABILIZED WITH NON-TOXIC SOIL STABILIZER MANUFACTURED BY STABILIZER INC., PHOENIX, AZ. OR EQUAL.
2. APPROX. 175 LF OF 4' D.G. ACCESSIBLE PATH

PURPOSE: provide handicap access on site picnic area. DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 10-15-97 Project No. 3400	Figure 5 of 13 **PIER 98** **PEDESTRIAN PATH** Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



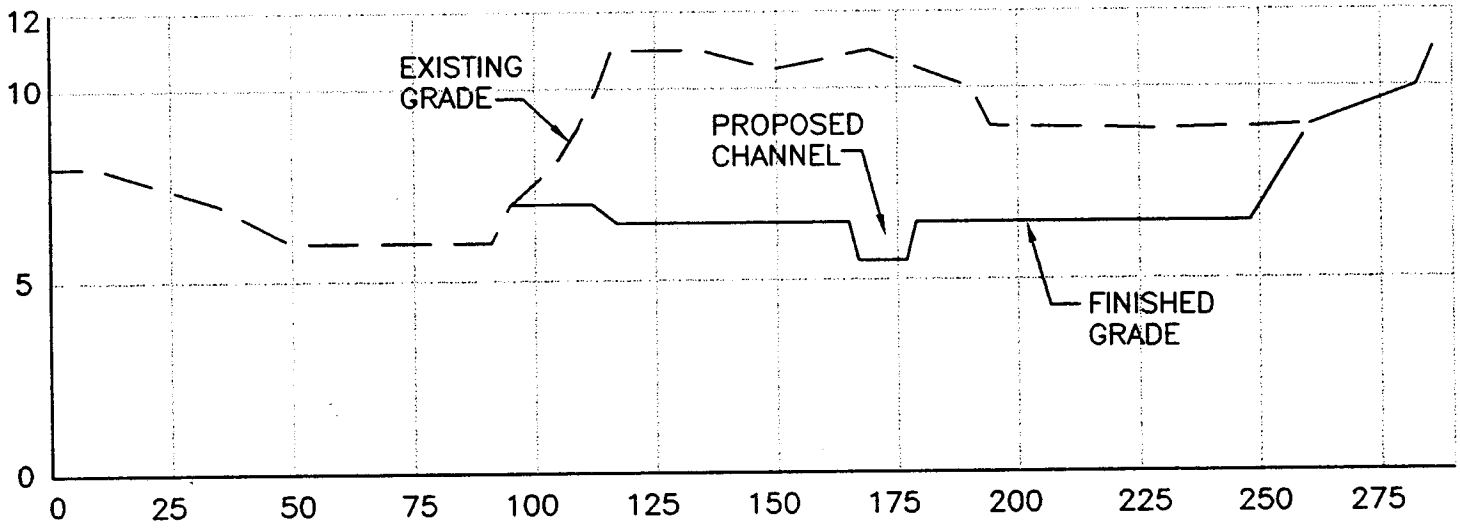
SECTION

N.T.S.

NOTES:

1. APPROX. 200,000 SF GEOTEXTILE
2. APPROX. 7,700 CY CUT
3. APPROX. 13,450 CY FILL

PURPOSE: inhibit rainfall infiltration capped area DATUM: MLLW	SECTION VIEW APPLICANT: Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 10-15-97 Project No. 3400	Figure 6 of 13 PIER 98 LANDFILL CAP Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon

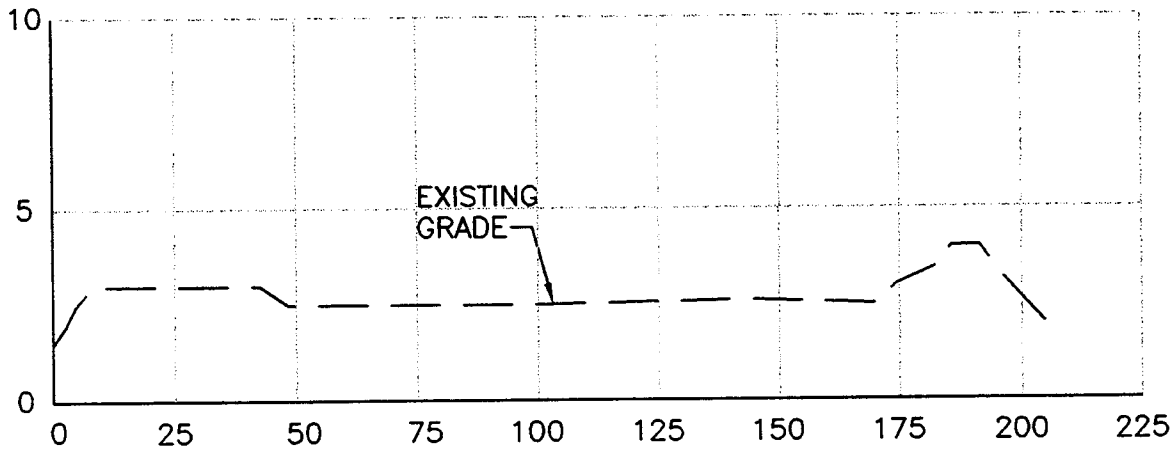


PROPOSED WETLAND SECTION 1/2

H: 1" = 40'
V: 1" = 5'

NOTES:

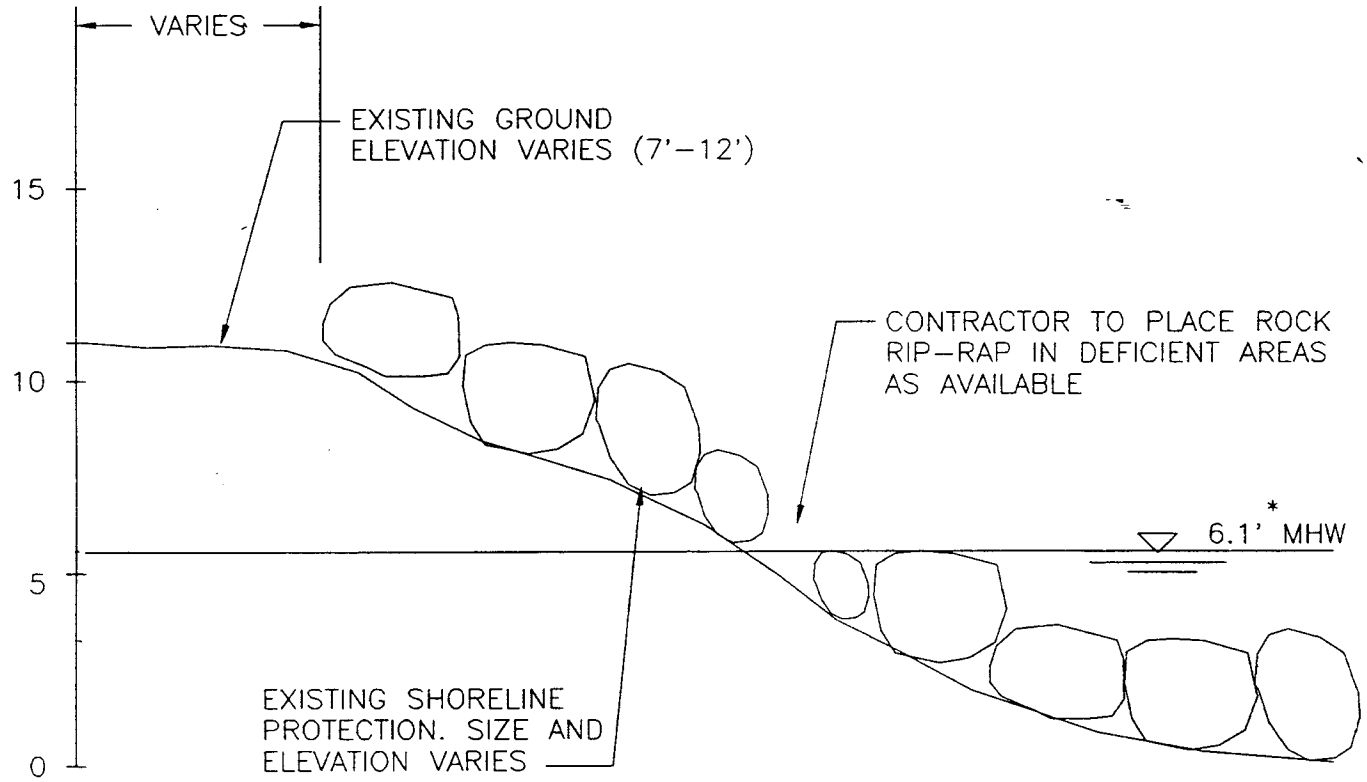
1. APPROX. 15,400 CY CUT



EXISTING WETLAND SECTION 2/2

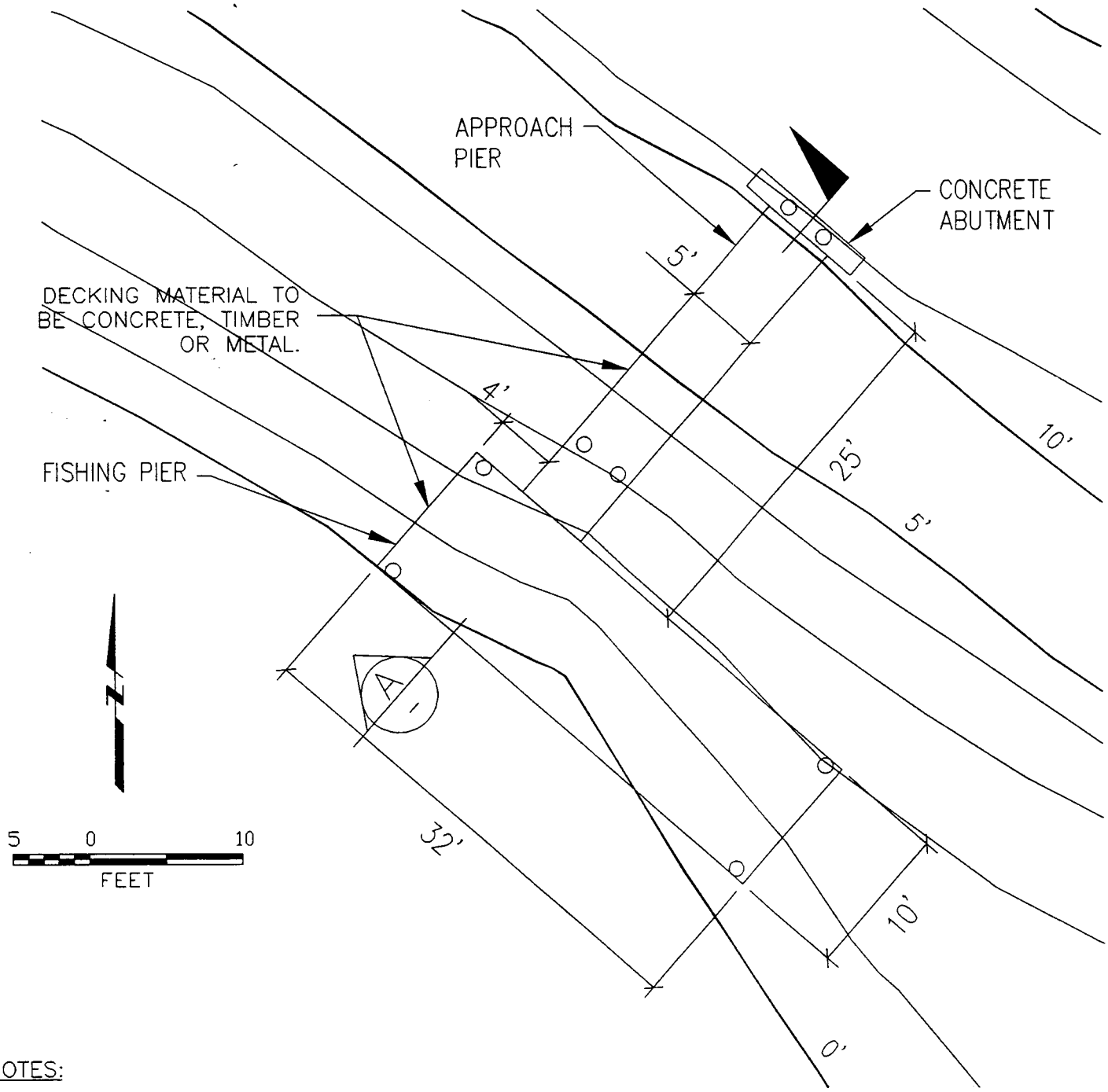
H: 1" = 40'
V: 1" = 5'

PURPOSE: Modify grades to enhance existing wetland and create new wetland areas DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 02-19-98 Project No. 3400	**Figure 7 of 13** **PIER 98 SECTIONS** Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



* BASED UPON TIDAL DATUM FROM HUNTERS PT. TIDAL STATION

PURPOSE: To show typical shoreline cross–section in areas along which rip–rap may be placed DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 02–19–98 Project No. 3400	Figure 8 of 13 PIER 98 TYPICAL SHORELINE SECTION Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine–Fricke–Recon

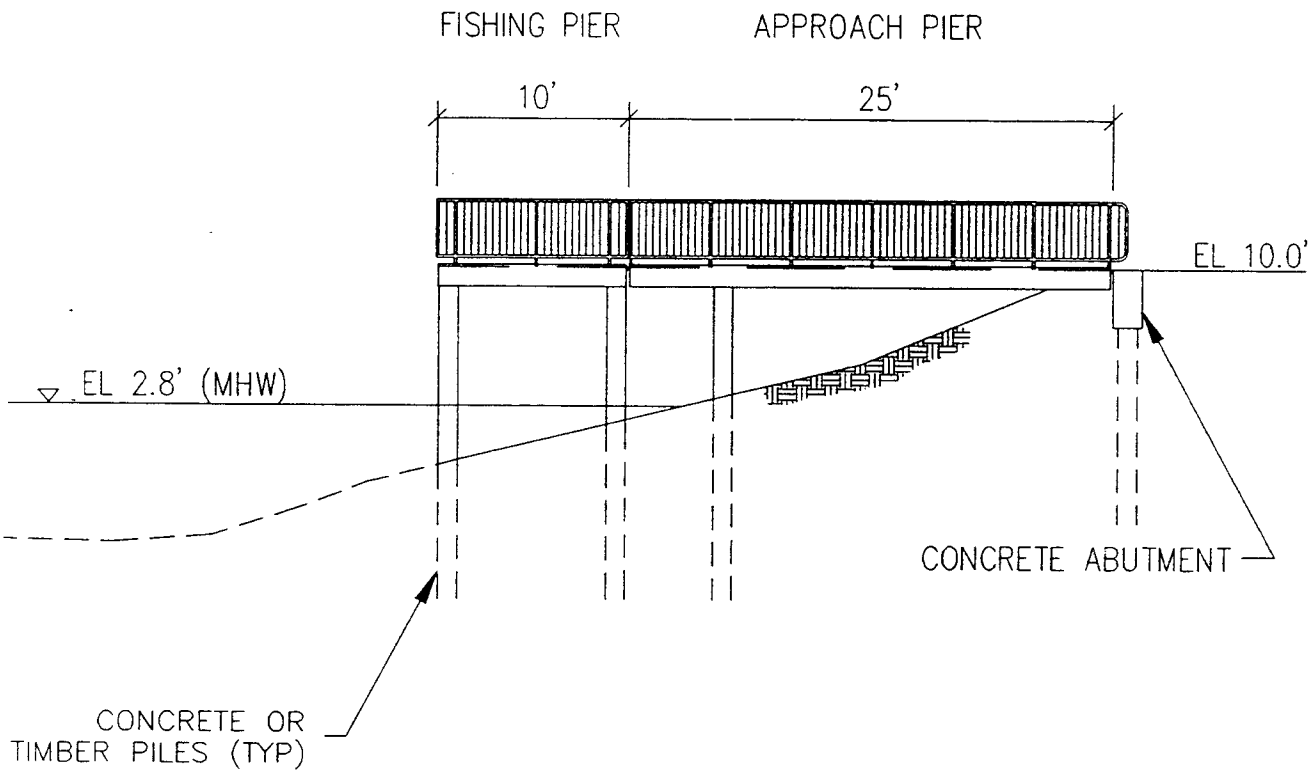


NOTES:

1. APPROX. 445 SF OF DECKING MATERIAL
2. 8 CONCRETE OR TIMBER PILES

PLAN

PURPOSE: Recreational fishing	PLAN VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111	Figure 9 of **13** PIER 98 PROPOSED FISHING PIER 1 OF 2 Project Location: India Basin, San Francisco Bay San Francisco County, California
DATUM: MLLW	Date: 10-15-97 Project No. 3400	Figures by: Levine-Fricke-Recon



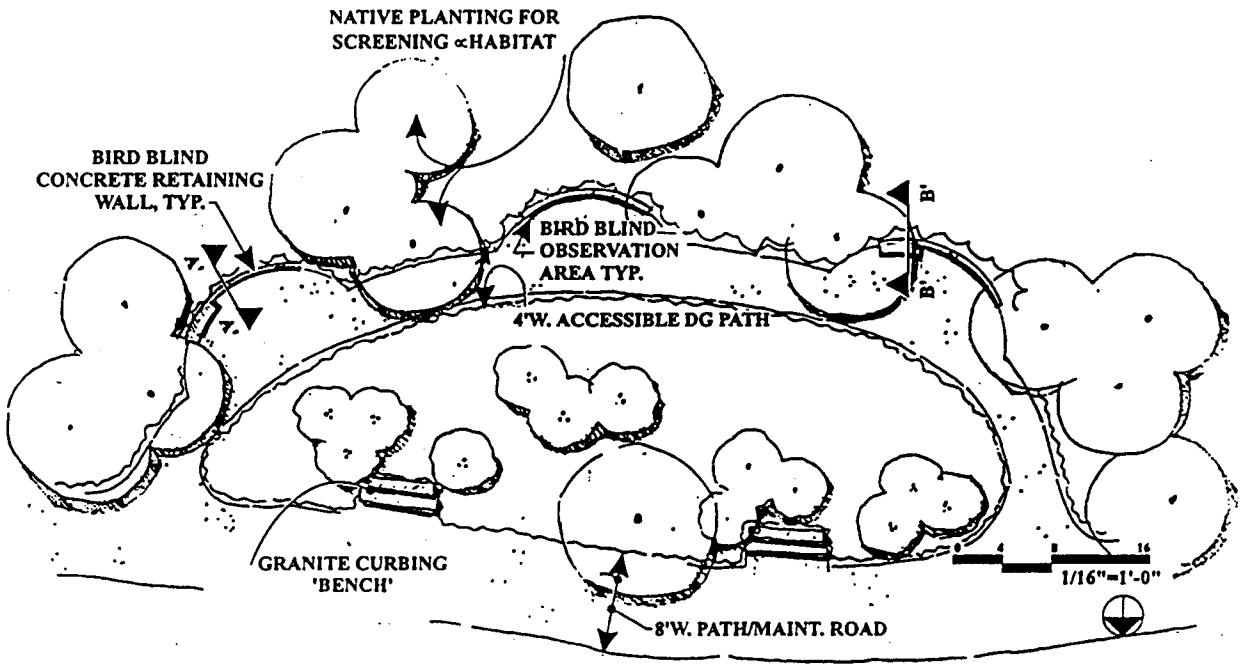
CROSS SECTION A

5 0 10
FEET

NOTES:

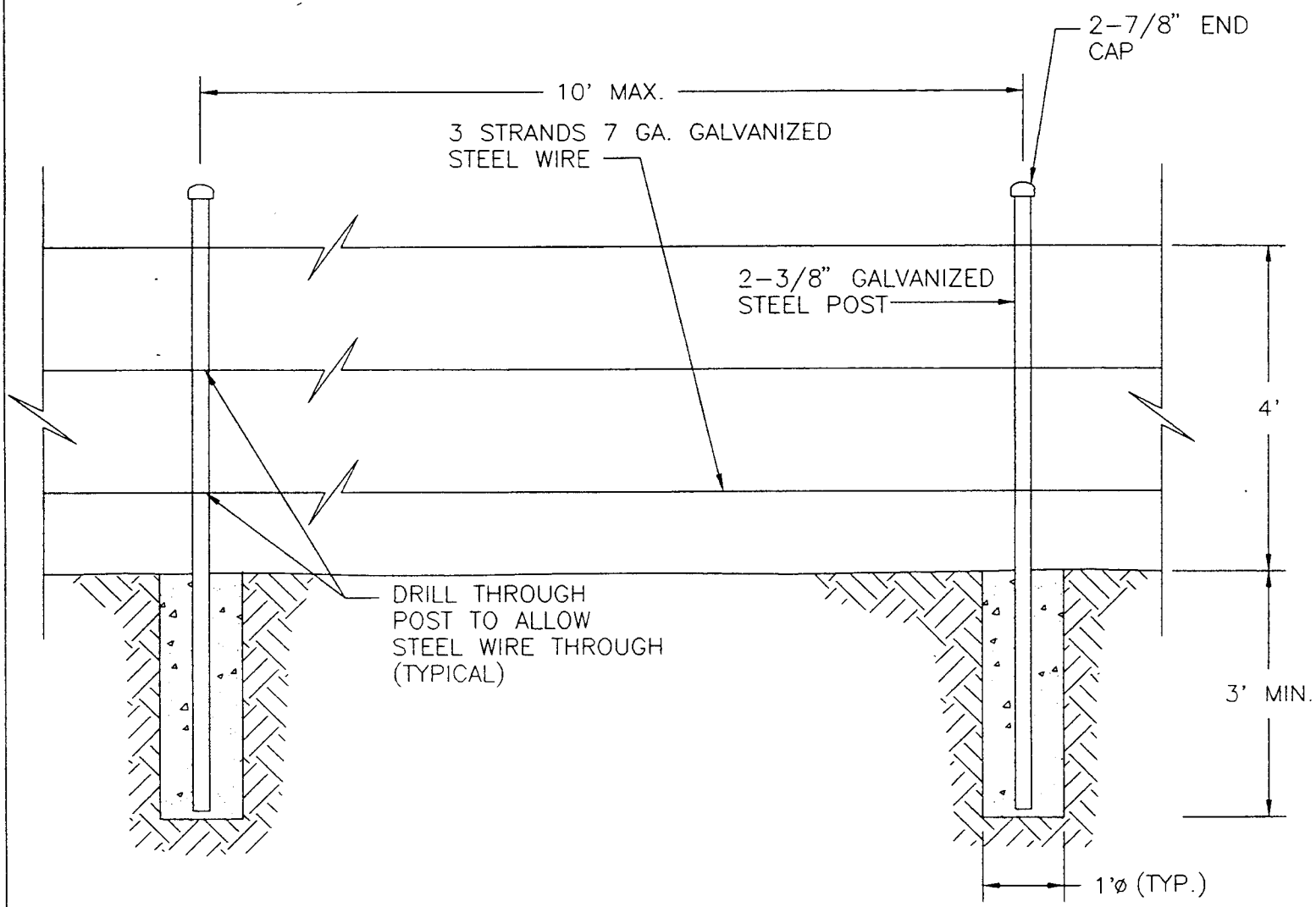
1. APPROX. 445 SF OF DECKING MATERIAL
2. 8 CONCRETE OR TIMBER PILES

PURPOSE: Recreational fishing DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 10-15-97 Project No. 3400	Figure 10 of **13** PIER 98 PROPOSED FISHING PIER 2 OF 2 Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



SECTION A'-A' - ADULT OBSERV.

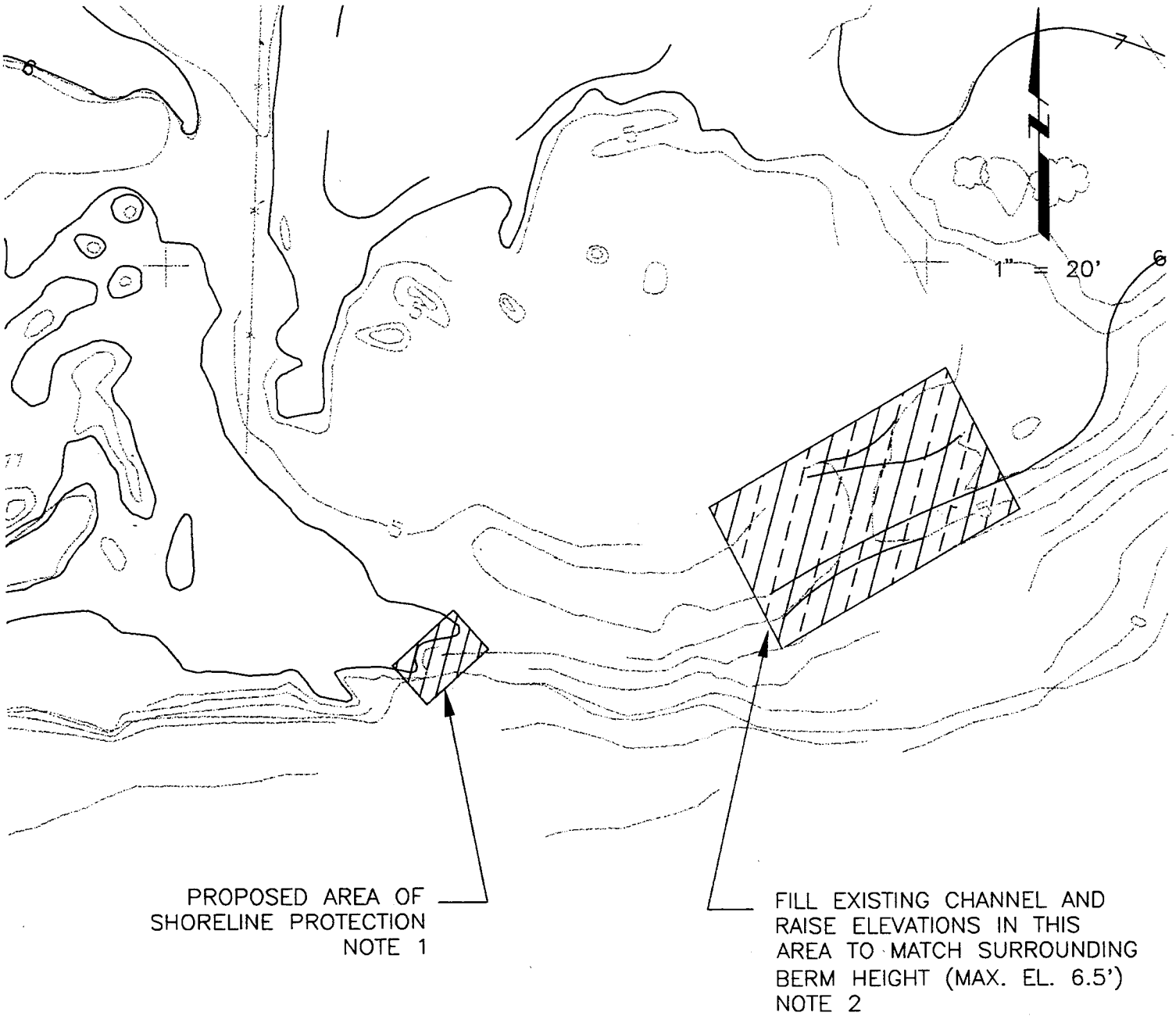
PURPOSE: To provide sheltered bird viewing area adjacent to wetland DATUM: MLLW	SECTION VIEW APPLICANT: Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 02-19-98 Project No. 3400	Figure 11 of 13 PIER 98 FENCE DETAIL Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



NOTES:

1. APPROX. 2550 LF OF FENCE

PURPOSE: To define approximate boundary of wetland area DATUM: MLLW	SECTION VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 02-19-98 Project No. 3400	Figure 12 of 13 PIER 98 FENCE DETAIL Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon



NOTES:

1. APPROX. 12.5 TONS ON-SITE MATERIAL TO USE AS SHORELINE PROTECTION (~18 CY). ANY ADDITIONAL EXCAVATED MATERIAL SUITABLE FOR SHORELINE PROTECTION WILL BE INCORPORATED INTO ON SITE RIP RAP (~3300 CY)

2. APPROX. 300 CY FILL

PURPOSE: To prevent further shoreline erosion and scour that may drain existing ponds. DATUM: MLLW	PLAN VIEW **APPLICANT:** Port of San Francisco Ferry Building, Suite 3100 San Francisco, California 94111 Date: 02-19-98 Project No. 3400	**Figure 13 of 13** **PIER 98** **RIP RAP AND SHELF FILL AREAS** Project Location: India Basin, San Francisco Bay San Francisco County, California Figures by: Levine-Fricke-Recon